



November 17, 2022

Nicole Yuen  
California Department of Toxic Substances Control  
700 Heinz Avenue, Suite 200C  
Berkeley, California 94710

*Via email: Nicole.Yuen@dtsc.ca.gov*

**Subject: Implementation of Soil Management Plan  
Intercollegiate Athletics (IA) Throw Area  
Richmond Field Station, UC Berkeley  
Sample Results Summary, Updated SMP Form B**

Dear Ms. Yuen:

On behalf of the University of California, Berkeley, Tetra Tech, Inc. conducted soil sampling at the Intercollegiate Athletics (IA) Throw Area located north of Building 277 at the Richmond Field Station under the Soil Management Plan (SMP). The project involves grading and adding concrete to the area to improve access for UC Berkeley's IA discus, hammer, and shotput activities. The area is approximately 31,300 square feet and will be graded up to 2 feet in depth in some locations. No soil is slated for removal. This project is subject to the SMP as the excavated soil exceeds the 10 cubic yard *de minimis* criteria, as defined in the most current Final SMP, Revision 1, dated April 17, 2019.

UC Berkeley provided SMP Forms A and B to DTSC on October 11, 2022, which summarize the project information and proposed sampling. DTSC approved the forms on October 12, 2022. This letter provides the sample results summary and updated SMP Form B.

### **Sample Locations**

The IA Throw Area is located in SMP Areas 8 (27,000 square feet) and 9 (4,300 square feet). Area 8 is designated as Medium-Density Sampling Area: a minimum of one location to be sampled per 100-foot grid spacing or 10,000 square feet. Area 9 is designated as High-Density Sampling Area: a minimum of one location to be sampled per 75-foot grid spacing or 5,625 square feet. Three sample locations within the Area 8 footprint and one sample within the Area 9 footprint were identified to meet the frequency requirements of the SMP.

Sampling was conducted on October 25, 2022. The proposed location for the Area 9 samples could not be collected in the original proposed area due to the presence of a former building slab located 1 foot below ground surface. The location was moved south to avoid the building slab. Sample locations are shown on SMP Form B, as attached.

Soil samples were collected from depths of 0 to 0.5 and 2.0 to 2.5 feet below ground surface at each location, consistent with the SMP. Samples were not proposed to be collected deeper than the project area, since there is no potential for future construction or maintenance work to breach the new concrete.

## Field Sampling Protocols

Sample collection protocols were consistent with the Final Sampling and Analysis Plan for the Soil Management Plan, Removal Action Workplan, Exhibit C2, dated July 18, 2014. Surficial grass was removed with a disposable scoop and the 0 to 0.5 foot sample was collected with a disposable scoop. The 2 to 2.5 foot sample was collected with a stainless-steel hand auger. The auger was decontaminated with Alconox and de-ionized water between each hole and each sample.

One 8-ounce glass jar of soil was collected for each sample. The jars were labeled and packed into an insulated cooler with ice and transported under chain-of custody procedures via courier to McCampbell Analytical, Inc. in Pittsburg, California.

## Laboratory Analyses and Results

Soil samples were analyzed according to the SMP for SMP Area 8 and 9 for arsenic, lead, mercury, polychlorinated biphenyls (PCB), and polycyclic aromatic hydrocarbons (PAH) using the methods listed below.

- Arsenic, lead, and mercury analysis by EPA 6010C/7471A
- PCB analysis by EPA 8082A with Soxhlet extraction
- PAH analysis by EPA 8270D SIM


Results were detected for arsenic, lead, mercury, and some PAHs; all PCB were non-detect. Results were compared to the updated screening values presented in the Final Removal Action Workplan, Five-Year Review, dated June 6, 2022. All metals results are below the Category, as shown on Tables 1, 2, and 3. Complete analytical results are included as Attachment A, Analytical Results.

## Conclusions

All soil sample results are below the SMP Category I Criteria, which allows the soil to be managed within the project boundary without further reporting.

If you have any questions or comments regarding this submittal, please call me at (415) 497-9060 or Alicia Bihler at (510) 725-2528.

Sincerely,

  
Jason Brodersen, PG  
Program Manager

cc: Alicia Bihler, UC Berkeley EH&S

Attachments: Updated SMP Form B  
Table 1 Metals Results Summary  
Table 2 Polychlorinated Biphenyl Results Summary  
Table 3 Polycyclic Aromatic Hydrocarbon Results Summary  
Attachment A: Analytical Results



**SMP FORM B: SAMPLING, DATA EVALUATION, SOIL MANAGEMENT ACTION**

Project Name: JA Throw Area Improvements

Tracking Number: 2022-10-IA Throw Area Revision Number: NA

SMP Form B Initiation Date: 10/05/22

EH&S Point of Contact: Alicia Bihler

*If this form has not been approved or no activities have occurred for 1 year, the information contained herein must be reviewed and updated as necessary prior to work occurring in the project area.*

**1. Sampling Design (attach Sampling Strategy Memorandum)**

a. SMP Areas Affected	SMP Area 8		
b. Sampling Density and Planned Number of Sample Locations	Density: Medium (One sample per 10,000 sf of project area / 100 ft grid spacing) Planning 4 sample locations		
c. Chemicals of Concern and Summary of Existing Data	Samples to be analyzed for arsenic, mercury, lead, PCBs, PAHs.		
d. Sampling Depths and Intervals	Samples will be collected in 0.5-foot depth intervals at the surface and extending to a depth of 2.5 feet at each of the 4 sample locations		
e. Project is within area of GW above screening criteria	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Consult SMP Table 1
f. Sampling design meets all SMP prescriptive requirements	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
	If No, DTSC concurrence received?		
	Yes <input type="checkbox"/>	No <input type="checkbox"/>	

**2. Data Evaluation (Post-Sampling) (attach Data Summary Report)**

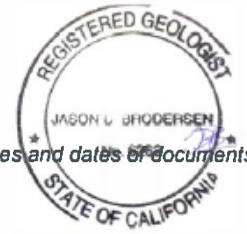
a. Sampling Design Implemented	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
	If No, describe deviations:		
b. Sample Results Meet Category I	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Consult SMP Table 3
	If Yes, submit summary report with SMP Form B If sample results indicate unanticipated contamination or discovery, notify DTSC		
c. Soil Exceeding Category I is Defined Vertically and Laterally	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
	If No, consult sampling requirements or defer to excavation confirmation sampling		
d. Soil Meets Category II Criteria	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
	Soil proposed for on-site management requires plan Soil above Category II criteria requires excavation plan		

**3. Soil Management Action (Post-Sampling) (attach On-Site Management or Soil Excavation Plan)**

a. On-Site Management Plan Meets SMP Requirements	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Consult SMP Section 4.3
	If No, provide explanation or contact DTSC:		
b. Excavation Plan Meets SMP Requirements	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Consult SMP Section 4.3
	If No, provide explanation or contact DTSC:		

**4. SMP Form B Approval**

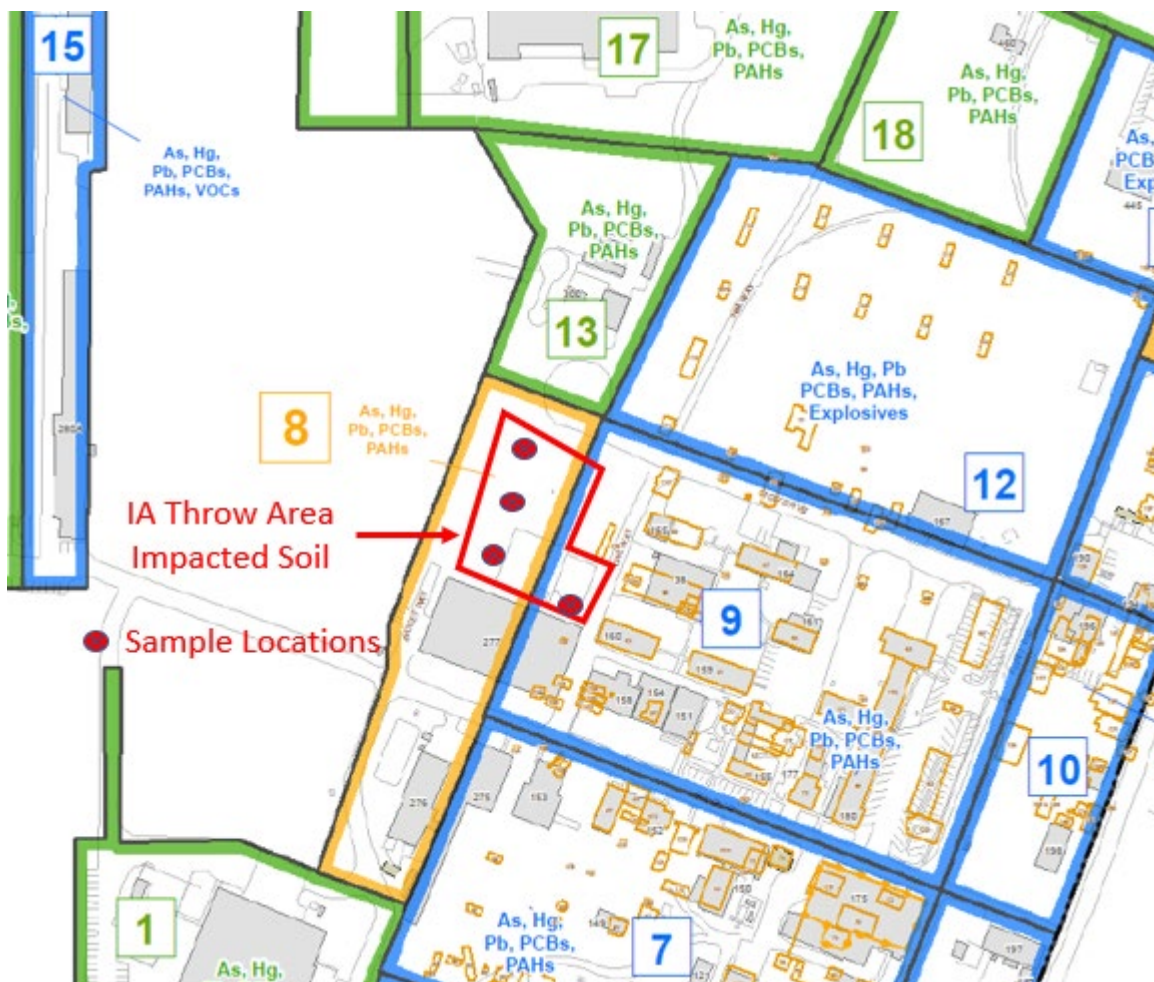
a. Alicia Bihler, Project Coordinator, EH&S	<u>Alicia Bihler</u>	<u>11/16/22</u>	
	(Signature, Date)		
b. John Mitchell, Facilities Management, UCB, College of Engineering	<u>John T Mitchell</u>	<u>11/16/22</u>	
	(Signature, Date)		
c. Professional Civil Engineer or Geologist	<u>[Signature]</u>	<u>11.16.2022</u>	
	(Name, Signature, Date, Stamp)		



**5. References Used to Complete Form**

*Include names and dates of documents*

SMP Form B  
IA Throw Area  
Site Map



**Source:**

Figure C-7

Soil Management Plan Areas

Sampling Densities and Recommended Analytes

*Final Soil Management Plan, Revision 1  
Removal Action Workplan, Attachment C  
April 12, 2017*



**Table 2. Polychlorinated Biphenyl Results Summary  
IA Throw Area  
University of California, Berkeley, Richmond Field Station**

Sample ID	Sample Location	Depth (feet bgs)	Units	AROCLOR-1016	AROCLOR-1221	AROCLOR-1232	AROCLOR-1242	AROCLOR-1248	AROCLOR-1254	AROCLOR-1260	AROCLOR-1262	AROCLOR-1268	TOTAL AROCLOR
<b>Category I Criteria</b>							1	1	1	1			1
<b>Category II On-Site Management Criteria</b>							10	10	10	10			10
<b>Maintenance Worker Screening Criteria</b>							1	1	1	1			1
SMP-IA THROW AREA.LOC 1. 0-0.5	IA THROW AREA.LOC 1	0.0 - 0.5	MG/KG	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
SMP-IA THROW AREA.LOC 1. 2-2.5	IA THROW AREA.LOC 1	2.0 - 2.5	MG/KG	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
SMP-IA THROW AREA.LOC 2. 0-0.5	IA THROW AREA.LOC 2	0.0 - 0.5	MG/KG	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
SMP-IA THROW AREA.LOC 2. 2-2.5	IA THROW AREA.LOC 2	2.0 - 2.5	MG/KG	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
SMP-IA THROW AREA.LOC 3. 0-0.5	IA THROW AREA.LOC 3	0.0 - 0.5	MG/KG	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
SMP-IA THROW AREA.LOC 3. 2-2.5	IA THROW AREA.LOC 3	2.0 - 2.5	MG/KG	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
SMP-IA THROW AREA.LOC 4. 0-0.5	IA THROW AREA.LOC 4	0.0 - 0.5	MG/KG	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
SMP-IA THROW AREA.LOC 4. 2-2.5	IA THROW AREA.LOC 4	2.0 - 2.5	MG/KG	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U

Notes:

Screening values based on site-specific background concentration listed in the Final Removal Action Workplan, Five Year Plan, Table 1.

The Maintenance Criteria is the greater of the risk-based or background value.

- bgs                               Below ground surface
- MG/KG                            Milligrams per kilogram
- U                                    Nondetect

**Table 3. Polycyclic Aromatic Hydrocarbon Results Summary**  
**IA Throw Area**  
**University of California, Berkeley, Richmond Field Station**

Sample ID	Sample Location	Depth (feet bgs)	Units	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZ(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PYRENE	BAP (EQ)
<b>Category I Criteria</b>				36.4	403	6,050	6,050	30,200	0.88	0.145	0.88	3,020	0.88	8.8	0.145	4,030	4,030	0.88	3.57	4,030	3,020	0.145
<b>Category II On-Site Management Criteria</b>				364	4,030	60,500	60,500	100,000	8.8	1.45	8.8	30,200	8.8	88	1.45	40,300	40,300	8.8	35.7	40,300	30,200	1.45
<b>Maintenance Worker Screening Criteria</b>				243	10,100	100,000	100,000	100,000	5.87	0.963	5.87	75,600	5.87	58.7	0.963	100,000	100,000	5.87	399	100,000	75,600	0.963
SMP-IA THROW AREA.LOC 1. 0-0.5	IA THROW AREA.LOC 1	0.0 - 0.5	MG/KG	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.21 U	0.053	0.086	0.062	0.043	0.04 U	0.04 U	0.12	0.04 U	0.21 U	0.1 U	0.038	0.078	0.06203
SMP-IA THROW AREA.LOC 1. 2-2.5	IA THROW AREA.LOC 1	2.0 - 2.5	MG/KG	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.026 U	0.024	0.029	0.018	0.012	0.016	0.0056	0.044	0.005 U	0.026 U	0.012 U	0.021	0.033	0.032636
SMP-IA THROW AREA.LOC 2. 0-0.5	IA THROW AREA.LOC 2	0.0 - 0.5	MG/KG	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	0.1 U	0.2 U	1 U
SMP-IA THROW AREA.LOC 2. 2-2.5	IA THROW AREA.LOC 2	2.0 - 2.5	MG/KG	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.065 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.065 U	0.031 U	0.0065 U	0.012 U	0.065 U
SMP-IA THROW AREA.LOC 3. 0-0.5	IA THROW AREA.LOC 3	0.0 - 0.5	MG/KG	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.065 U	0.028	0.032	0.0065 U	0.017	0.021	0.012 U	0.046	0.012 U	0.065 U	0.031 U	0.024	0.038	0.031391
SMP-IA THROW AREA.LOC 3. 2-2.5	IA THROW AREA.LOC 3	2.0 - 2.5	MG/KG	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.013 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.013 U	0.0062 U	0.0013 U	0.0025 U	0.013 U
SMP-IA THROW AREA.LOC 4. 0-0.5	IA THROW AREA.LOC 4	0.0 - 0.5	MG/KG	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	2.1 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	2.1 U	1 U	0.21 U	0.4 U	2.1 U
SMP-IA THROW AREA.LOC 4. 2-2.5	IA THROW AREA.LOC 4	2.0 - 2.5	MG/KG	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.013 U	0.0026	0.0033	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0042	0.0025 U	0.013 U	0.0062 U	0.0018	0.0037	0.00293

Notes:  
background concentration listed in the  
The Maintenance Criteria is the greater of the risk-based or background value.  
BAP (EQ) Benzo(a)pyrene equivalency quotient  
bgs Below ground surface  
MG/KG Milligrams per kilogram  
U Nondetect reporting limit

**Attachment 1**  
**Complete Analytical Results**





# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 2210J05 **Amended:** 11/10/2022

**Revision:** 1

**Report Created for:** Tetra Tech Inc.

1999 Harrison Street, Suite 500  
Oakland, CA 94612

**Project Contact:** Jason Brodersen

**Project P.O.:**

**Project:** UC Berkeley Sampling

**Project Received:** 10/26/2022

Analytical Report reviewed & approved for release on 11/07/2022 by:

Jena Alfaro  
Project Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in a case narrative.*





## Revision History

**Client:** Tetra Tech Inc.  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05

<u>Date</u>	<u>Revision</u>	<u>Reason</u>
11/10/2022	1	008A Sample ID Corrected Per Client Email.



## Glossary of Terms & Qualifier Definitions

**Client:** Tetra Tech Inc.

**WorkOrder:** 2210J05

**Project:** UC Berkeley Sampling

### Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CPT	Consumer Product Testing not NELAP Accredited
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	MDL is the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results. Definition and Procedure for the Determination of the Method Detection Limit, Revision 2, 40CFR, Part 136, Appendix B, EPA 821-R-16-006, December 2016.
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting limit is the lowest level that can be reliably determined within specified limits of precision and accuracy during routine laboratory operating conditions. (The RL cannot be lower than the lowest calibration standard used in the initial calibration of the instrument and must be greater than the MDL.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



## **Glossary of Terms & Qualifier Definitions**

**Client:** Tetra Tech Inc.

**WorkOrder:** 2210J05

**Project:** UC Berkeley Sampling

### **Analytical Qualifiers**

- a2 Sample diluted due to cluttered chromatogram.
- a3 Sample diluted due to high organic content interfering with quantitative/or qualitative analysis.
- a4 Reporting limits raised due to the sample's matrix prohibiting a full volume extraction.

### **Quality Control Qualifiers**

- F3 The surrogate standard recovery and/or RPD is outside of acceptance limits.



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/31/2022-11/03/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3540C  
**Analytical Method:** SW8082  
**Unit:** mg/kg

### Polychlorinated Biphenyls (PCBs) Aroclors w/ Soxhlet Extraction

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 1. 0-0.5	2210J05-001A	Soil	10/25/2022 12:15	GC20 11042236.D	257640

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.050	1	11/04/2022 22:38
Aroclor1221	ND	0.050	1	11/04/2022 22:38
Aroclor1232	ND	0.050	1	11/04/2022 22:38
Aroclor1242	ND	0.050	1	11/04/2022 22:38
Aroclor1248	ND	0.050	1	11/04/2022 22:38
Aroclor1254	ND	0.050	1	11/04/2022 22:38
Aroclor1260	ND	0.050	1	11/04/2022 22:38
Aroclor1262	ND	0.050	1	11/04/2022 22:38
Aroclor1268	ND	0.050	1	11/04/2022 22:38
PCBs, total	ND	0.050	1	11/04/2022 22:38

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	68	50-150	11/04/2022 22:38

Analyst(s): CK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 1. 2-2.5	2210J05-002A	Soil	10/25/2022 12:25	GC20 10312245.D	257366

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.10	2	10/31/2022 19:22
Aroclor1221	ND	0.10	2	10/31/2022 19:22
Aroclor1232	ND	0.10	2	10/31/2022 19:22
Aroclor1242	ND	0.10	2	10/31/2022 19:22
Aroclor1248	ND	0.10	2	10/31/2022 19:22
Aroclor1254	ND	0.10	2	10/31/2022 19:22
Aroclor1260	ND	0.10	2	10/31/2022 19:22
Aroclor1262	ND	0.10	2	10/31/2022 19:22
Aroclor1268	ND	0.10	2	10/31/2022 19:22
PCBs, total	ND	0.10	2	10/31/2022 19:22

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	73	50-150	10/31/2022 19:22

Analyst(s): CK

Analytical Comments: a2

(Cont.)



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/31/2022-11/03/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3540C  
**Analytical Method:** SW8082  
**Unit:** mg/kg

### Polychlorinated Biphenyls (PCBs) Aroclors w/ Soxhlet Extraction

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 2. 0-0.5	2210J05-003A	Soil	10/25/2022 13:10	GC20 10312246.D	257366

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.10	2	10/31/2022 19:39
Aroclor1221	ND	0.10	2	10/31/2022 19:39
Aroclor1232	ND	0.10	2	10/31/2022 19:39
Aroclor1242	ND	0.10	2	10/31/2022 19:39
Aroclor1248	ND	0.10	2	10/31/2022 19:39
Aroclor1254	ND	0.10	2	10/31/2022 19:39
Aroclor1260	ND	0.10	2	10/31/2022 19:39
Aroclor1262	ND	0.10	2	10/31/2022 19:39
Aroclor1268	ND	0.10	2	10/31/2022 19:39
PCBs, total	ND	0.10	2	10/31/2022 19:39

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	74	50-150	10/31/2022 19:39

Analyst(s): CK Analytical Comments: a2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 2. 2-2.5	2210J05-004A	Soil	10/25/2022 13:20	GC20 11042237.D	257640

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.050	1	11/04/2022 22:54
Aroclor1221	ND	0.050	1	11/04/2022 22:54
Aroclor1232	ND	0.050	1	11/04/2022 22:54
Aroclor1242	ND	0.050	1	11/04/2022 22:54
Aroclor1248	ND	0.050	1	11/04/2022 22:54
Aroclor1254	ND	0.050	1	11/04/2022 22:54
Aroclor1260	ND	0.050	1	11/04/2022 22:54
Aroclor1262	ND	0.050	1	11/04/2022 22:54
Aroclor1268	ND	0.050	1	11/04/2022 22:54
PCBs, total	ND	0.050	1	11/04/2022 22:54

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	65	50-150	11/04/2022 22:54

Analyst(s): CK

(Cont.)



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/31/2022-11/03/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3540C  
**Analytical Method:** SW8082  
**Unit:** mg/kg

### Polychlorinated Biphenyls (PCBs) Aroclors w/ Soxhlet Extraction

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 3. 0-0.5	2210J05-005A	Soil	10/25/2022 13:55	GC20 11042238.D	257640

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.050	1	11/04/2022 23:10
Aroclor1221	ND	0.050	1	11/04/2022 23:10
Aroclor1232	ND	0.050	1	11/04/2022 23:10
Aroclor1242	ND	0.050	1	11/04/2022 23:10
Aroclor1248	ND	0.050	1	11/04/2022 23:10
Aroclor1254	ND	0.050	1	11/04/2022 23:10
Aroclor1260	ND	0.050	1	11/04/2022 23:10
Aroclor1262	ND	0.050	1	11/04/2022 23:10
Aroclor1268	ND	0.050	1	11/04/2022 23:10
PCBs, total	ND	0.050	1	11/04/2022 23:10

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	65	50-150	11/04/2022 23:10

Analyst(s): CK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 3. 2-2.5	2210J05-006A	Soil	10/25/2022 14:05	GC20 11042239.D	257640

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.050	1	11/04/2022 23:26
Aroclor1221	ND	0.050	1	11/04/2022 23:26
Aroclor1232	ND	0.050	1	11/04/2022 23:26
Aroclor1242	ND	0.050	1	11/04/2022 23:26
Aroclor1248	ND	0.050	1	11/04/2022 23:26
Aroclor1254	ND	0.050	1	11/04/2022 23:26
Aroclor1260	ND	0.050	1	11/04/2022 23:26
Aroclor1262	ND	0.050	1	11/04/2022 23:26
Aroclor1268	ND	0.050	1	11/04/2022 23:26
PCBs, total	ND	0.050	1	11/04/2022 23:26

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	65	50-150	11/04/2022 23:26

Analyst(s): CK

(Cont.)



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/31/2022-11/03/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3540C  
**Analytical Method:** SW8082  
**Unit:** mg/kg

### Polychlorinated Biphenyls (PCBs) Aroclors w/ Soxhlet Extraction

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 4. 0-0.5	2210J05-007A	Soil	10/25/2022 14:35	GC20 11042240.D	257640

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.10	2	11/04/2022 23:42
Aroclor1221	ND	0.10	2	11/04/2022 23:42
Aroclor1232	ND	0.10	2	11/04/2022 23:42
Aroclor1242	ND	0.10	2	11/04/2022 23:42
Aroclor1248	ND	0.10	2	11/04/2022 23:42
Aroclor1254	ND	0.10	2	11/04/2022 23:42
Aroclor1260	ND	0.10	2	11/04/2022 23:42
Aroclor1262	ND	0.10	2	11/04/2022 23:42
Aroclor1268	ND	0.10	2	11/04/2022 23:42
PCBs, total	ND	0.10	2	11/04/2022 23:42

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	65	50-150	11/04/2022 23:42

Analyst(s): CK Analytical Comments: a3

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 4. 2-2.5	2210J05-008A	Soil	10/25/2022 14:55	GC20 10312238.D	257366

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.050	1	10/31/2022 17:30
Aroclor1221	ND	0.050	1	10/31/2022 17:30
Aroclor1232	ND	0.050	1	10/31/2022 17:30
Aroclor1242	ND	0.050	1	10/31/2022 17:30
Aroclor1248	ND	0.050	1	10/31/2022 17:30
Aroclor1254	ND	0.050	1	10/31/2022 17:30
Aroclor1260	ND	0.050	1	10/31/2022 17:30
Aroclor1262	ND	0.050	1	10/31/2022 17:30
Aroclor1268	ND	0.050	1	10/31/2022 17:30
PCBs, total	ND	0.050	1	10/31/2022 17:30

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	70	50-150	10/31/2022 17:30

Analyst(s): CK





## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022-10/28/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 1. 0-0.5	2210J05-001A	Soil	10/25/2022 12:15	GC48 10282209.D	257169

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.021	2	10/28/2022 12:55
Acenaphthylene	ND	0.021	2	10/28/2022 12:55
Anthracene	ND	0.021	2	10/28/2022 12:55
Benzo (a) anthracene	ND	0.21	2	10/28/2022 12:55
Benzo (a) pyrene	<b>0.053</b>	0.040	2	10/28/2022 12:55
Benzo (b) fluoranthene	<b>0.086</b>	0.040	2	10/28/2022 12:55
Benzo (g,h,i) perylene	<b>0.062</b>	0.040	2	10/28/2022 12:55
Benzo (k) fluoranthene	<b>0.043</b>	0.040	2	10/28/2022 12:55
Chrysene	ND	0.040	2	10/28/2022 12:55
Dibenzo (a,h) anthracene	ND	0.040	2	10/28/2022 12:55
Fluoranthene	<b>0.12</b>	0.040	2	10/28/2022 12:55
Fluorene	ND	0.040	2	10/28/2022 12:55
Indeno (1,2,3-cd) pyrene	ND	0.21	2	10/28/2022 12:55
1-Methylnaphthalene	ND	0.021	2	10/28/2022 12:55
2-Methylnaphthalene	ND	0.021	2	10/28/2022 12:55
Naphthalene	ND	0.10	2	10/28/2022 12:55
Phenanthrene	<b>0.038</b>	0.021	2	10/28/2022 12:55
Pyrene	<b>0.078</b>	0.040	2	10/28/2022 12:55

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorobiphenyl	81	60-130	10/28/2022 12:55
2-Fluorophenol	90	60-130	10/28/2022 12:55

Analyst(s): MV

Analytical Comments: a4



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022-10/28/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 1. 2-2.5	2210J05-002A	Soil	10/25/2022 12:25	GC48 10282210.D	257169

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0026	2	10/28/2022 13:23
Acenaphthylene	ND	0.0026	2	10/28/2022 13:23
Anthracene	ND	0.0026	2	10/28/2022 13:23
Benzo (a) anthracene	ND	0.026	2	10/28/2022 13:23
Benzo (a) pyrene	<b>0.024</b>	0.0050	2	10/28/2022 13:23
Benzo (b) fluoranthene	<b>0.029</b>	0.0050	2	10/28/2022 13:23
Benzo (g,h,i) perylene	<b>0.018</b>	0.0050	2	10/28/2022 13:23
Benzo (k) fluoranthene	<b>0.012</b>	0.0050	2	10/28/2022 13:23
Chrysene	<b>0.016</b>	0.0050	2	10/28/2022 13:23
Dibenzo (a,h) anthracene	<b>0.0056</b>	0.0050	2	10/28/2022 13:23
Fluoranthene	<b>0.044</b>	0.0050	2	10/28/2022 13:23
Fluorene	ND	0.0050	2	10/28/2022 13:23
Indeno (1,2,3-cd) pyrene	ND	0.026	2	10/28/2022 13:23
1-Methylnaphthalene	ND	0.0026	2	10/28/2022 13:23
2-Methylnaphthalene	ND	0.0026	2	10/28/2022 13:23
Naphthalene	ND	0.012	2	10/28/2022 13:23
Phenanthrene	<b>0.021</b>	0.0026	2	10/28/2022 13:23
Pyrene	<b>0.033</b>	0.0050	2	10/28/2022 13:23

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorobiphenyl	87	60-130	10/28/2022 13:23
2-Fluorophenol	93	60-130	10/28/2022 13:23

Analyst(s): MV



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022-10/28/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 2. 0-0.5	2210J05-003A	Soil	10/25/2022 13:10	GC48 10282211.D	257169

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.10	10	10/28/2022 13:52
Acenaphthylene	ND	0.10	10	10/28/2022 13:52
Anthracene	ND	0.10	10	10/28/2022 13:52
Benzo (a) anthracene	ND	1.0	10	10/28/2022 13:52
Benzo (a) pyrene	ND	0.20	10	10/28/2022 13:52
Benzo (b) fluoranthene	ND	0.20	10	10/28/2022 13:52
Benzo (g,h,i) perylene	ND	0.20	10	10/28/2022 13:52
Benzo (k) fluoranthene	ND	0.20	10	10/28/2022 13:52
Chrysene	ND	0.20	10	10/28/2022 13:52
Dibenzo (a,h) anthracene	ND	0.20	10	10/28/2022 13:52
Fluoranthene	ND	0.20	10	10/28/2022 13:52
Fluorene	ND	0.20	10	10/28/2022 13:52
Indeno (1,2,3-cd) pyrene	ND	1.0	10	10/28/2022 13:52
1-Methylnaphthalene	ND	0.10	10	10/28/2022 13:52
2-Methylnaphthalene	ND	0.10	10	10/28/2022 13:52
Naphthalene	ND	0.50	10	10/28/2022 13:52
Phenanthrene	ND	0.10	10	10/28/2022 13:52
Pyrene	ND	0.20	10	10/28/2022 13:52

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorobiphenyl	88	60-130	10/28/2022 13:52
2-Fluorophenol	96	60-130	10/28/2022 13:52

Analyst(s): MV

Analytical Comments: a4,a3



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022-10/28/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 2. 2-2.5	2210J05-004A	Soil	10/25/2022 13:20	GC48 10282218.D	257276

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0065	5	10/28/2022 17:10
Acenaphthylene	ND	0.0065	5	10/28/2022 17:10
Anthracene	ND	0.0065	5	10/28/2022 17:10
Benzo (a) anthracene	ND	0.065	5	10/28/2022 17:10
Benzo (a) pyrene	ND	0.012	5	10/28/2022 17:10
Benzo (b) fluoranthene	ND	0.012	5	10/28/2022 17:10
Benzo (g,h,i) perylene	ND	0.012	5	10/28/2022 17:10
Benzo (k) fluoranthene	ND	0.012	5	10/28/2022 17:10
Chrysene	ND	0.012	5	10/28/2022 17:10
Dibenzo (a,h) anthracene	ND	0.012	5	10/28/2022 17:10
Fluoranthene	ND	0.012	5	10/28/2022 17:10
Fluorene	ND	0.012	5	10/28/2022 17:10
Indeno (1,2,3-cd) pyrene	ND	0.065	5	10/28/2022 17:10
1-Methylnaphthalene	ND	0.0065	5	10/28/2022 17:10
2-Methylnaphthalene	ND	0.0065	5	10/28/2022 17:10
Naphthalene	ND	0.031	5	10/28/2022 17:10
Phenanthrene	ND	0.0065	5	10/28/2022 17:10
Pyrene	ND	0.012	5	10/28/2022 17:10

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorobiphenyl	103	60-130	10/28/2022 17:10
2-Fluorophenol	119	60-130	10/28/2022 17:10

Analyst(s): MV



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022-10/28/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 3. 0-0.5	2210J05-005A	Soil	10/25/2022 13:55	GC48 10282219.D	257276

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0065	5	10/28/2022 17:39
Acenaphthylene	ND	0.0065	5	10/28/2022 17:39
Anthracene	ND	0.0065	5	10/28/2022 17:39
Benzo (a) anthracene	ND	0.065	5	10/28/2022 17:39
Benzo (a) pyrene	<b>0.028</b>	0.012	5	10/28/2022 17:39
Benzo (b) fluoranthene	<b>0.032</b>	0.012	5	10/28/2022 17:39
Benzo (g,h,i) perylene	<b>0.020</b>	0.012	5	10/28/2022 17:39
Benzo (k) fluoranthene	<b>0.017</b>	0.012	5	10/28/2022 17:39
Chrysene	<b>0.021</b>	0.012	5	10/28/2022 17:39
Dibenzo (a,h) anthracene	ND	0.012	5	10/28/2022 17:39
Fluoranthene	<b>0.046</b>	0.012	5	10/28/2022 17:39
Fluorene	ND	0.012	5	10/28/2022 17:39
Indeno (1,2,3-cd) pyrene	ND	0.065	5	10/28/2022 17:39
1-Methylnaphthalene	ND	0.0065	5	10/28/2022 17:39
2-Methylnaphthalene	ND	0.0065	5	10/28/2022 17:39
Naphthalene	ND	0.031	5	10/28/2022 17:39
Phenanthrene	<b>0.024</b>	0.0065	5	10/28/2022 17:39
Pyrene	<b>0.038</b>	0.012	5	10/28/2022 17:39

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorobiphenyl	103	60-130	10/28/2022 17:39
2-Fluorophenol	106	60-130	10/28/2022 17:39

Analyst(s): MV



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022-10/28/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 3. 2-2.5	2210J05-006A	Soil	10/25/2022 14:05	GC48 10282220.D	257276

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	10/28/2022 18:07
Acenaphthylene	ND	0.0013	1	10/28/2022 18:07
Anthracene	ND	0.0013	1	10/28/2022 18:07
Benzo (a) anthracene	ND	0.013	1	10/28/2022 18:07
Benzo (a) pyrene	ND	0.0025	1	10/28/2022 18:07
Benzo (b) fluoranthene	ND	0.0025	1	10/28/2022 18:07
Benzo (g,h,i) perylene	ND	0.0025	1	10/28/2022 18:07
Benzo (k) fluoranthene	ND	0.0025	1	10/28/2022 18:07
Chrysene	ND	0.0025	1	10/28/2022 18:07
Dibenzo (a,h) anthracene	ND	0.0025	1	10/28/2022 18:07
Fluoranthene	ND	0.0025	1	10/28/2022 18:07
Fluorene	ND	0.0025	1	10/28/2022 18:07
Indeno (1,2,3-cd) pyrene	ND	0.013	1	10/28/2022 18:07
1-Methylnaphthalene	ND	0.0013	1	10/28/2022 18:07
2-Methylnaphthalene	ND	0.0013	1	10/28/2022 18:07
Naphthalene	ND	0.0062	1	10/28/2022 18:07
Phenanthrene	ND	0.0013	1	10/28/2022 18:07
Pyrene	ND	0.0025	1	10/28/2022 18:07

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorobiphenyl	112	60-130	10/28/2022 18:07
2-Fluorophenol	119	60-130	10/28/2022 18:07

**Analyst(s):** MV



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022-10/28/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 4. 0-0.5	2210J05-007A	Soil	10/25/2022 14:35	GC48 10282221.D	257276

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.21	20	10/28/2022 18:36
Acenaphthylene	ND	0.21	20	10/28/2022 18:36
Anthracene	ND	0.21	20	10/28/2022 18:36
Benzo (a) anthracene	ND	2.1	20	10/28/2022 18:36
Benzo (a) pyrene	ND	0.40	20	10/28/2022 18:36
Benzo (b) fluoranthene	ND	0.40	20	10/28/2022 18:36
Benzo (g,h,i) perylene	ND	0.40	20	10/28/2022 18:36
Benzo (k) fluoranthene	ND	0.40	20	10/28/2022 18:36
Chrysene	ND	0.40	20	10/28/2022 18:36
Dibenzo (a,h) anthracene	ND	0.40	20	10/28/2022 18:36
Fluoranthene	ND	0.40	20	10/28/2022 18:36
Fluorene	ND	0.40	20	10/28/2022 18:36
Indeno (1,2,3-cd) pyrene	ND	2.1	20	10/28/2022 18:36
1-Methylnaphthalene	ND	0.21	20	10/28/2022 18:36
2-Methylnaphthalene	ND	0.21	20	10/28/2022 18:36
Naphthalene	ND	1.0	20	10/28/2022 18:36
Phenanthrene	ND	0.21	20	10/28/2022 18:36
Pyrene	ND	0.40	20	10/28/2022 18:36

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorobiphenyl	117	60-130	10/28/2022 18:36
2-Fluorophenol	125	60-130	10/28/2022 18:36

Analyst(s): MV

Analytical Comments: a4,a3



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022-10/28/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 4. 2-2.5	2210J05-008A	Soil	10/25/2022 14:55	GC48 10282222.D	257276

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.0013	1	10/28/2022 19:04
Acenaphthylene	ND	0.0013	1	10/28/2022 19:04
Anthracene	ND	0.0013	1	10/28/2022 19:04
Benzo (a) anthracene	ND	0.013	1	10/28/2022 19:04
Benzo (a) pyrene	<b>0.0026</b>	0.0025	1	10/28/2022 19:04
Benzo (b) fluoranthene	<b>0.0033</b>	0.0025	1	10/28/2022 19:04
Benzo (g,h,i) perylene	ND	0.0025	1	10/28/2022 19:04
Benzo (k) fluoranthene	ND	0.0025	1	10/28/2022 19:04
Chrysene	ND	0.0025	1	10/28/2022 19:04
Dibenzo (a,h) anthracene	ND	0.0025	1	10/28/2022 19:04
Fluoranthene	<b>0.0042</b>	0.0025	1	10/28/2022 19:04
Fluorene	ND	0.0025	1	10/28/2022 19:04
Indeno (1,2,3-cd) pyrene	ND	0.013	1	10/28/2022 19:04
1-Methylnaphthalene	ND	0.0013	1	10/28/2022 19:04
2-Methylnaphthalene	ND	0.0013	1	10/28/2022 19:04
Naphthalene	ND	0.0062	1	10/28/2022 19:04
Phenanthrene	<b>0.0018</b>	0.0013	1	10/28/2022 19:04
Pyrene	<b>0.0037</b>	0.0025	1	10/28/2022 19:04

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorobiphenyl	101	60-130	10/28/2022 19:04
2-Fluorophenol	117	60-130	10/28/2022 19:04

Analyst(s): MV





## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 1. 0-0.5	2210J05-001A	Soil	10/25/2022 12:15	ICP-MS5 281SMPL.d	257135

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.75	0.50	1	10/27/2022 22:03
Arsenic	9.8	0.50	1	10/27/2022 22:03
Barium	140	5.0	1	10/27/2022 22:03
Beryllium	0.57	0.50	1	10/27/2022 22:03
Cadmium	ND	0.50	1	10/27/2022 22:03
Chromium	48	0.50	1	10/27/2022 22:03
Cobalt	10	0.50	1	10/27/2022 22:03
Copper	31	0.50	1	10/27/2022 22:03
Lead	16	0.50	1	10/27/2022 22:03
Mercury	0.083	0.050	1	10/27/2022 22:03
Molybdenum	0.70	0.50	1	10/27/2022 22:03
Nickel	39	0.50	1	10/27/2022 22:03
Selenium	ND	0.50	1	10/27/2022 22:03
Silver	ND	0.50	1	10/27/2022 22:03
Thallium	ND	0.50	1	10/27/2022 22:03
Vanadium	54	0.50	1	10/27/2022 22:03
Zinc	89	5.0	1	10/27/2022 22:03

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	101	70-130	10/27/2022 22:03

Analyst(s): DB



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 1. 2-2.5	2210J05-002A	Soil	10/25/2022 12:25	ICP-MS5 282SMPL.d	257135

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.59	0.50	1	10/27/2022 22:06
Arsenic	6.2	0.50	1	10/27/2022 22:06
Barium	210	5.0	1	10/27/2022 22:06
Beryllium	0.54	0.50	1	10/27/2022 22:06
Cadmium	ND	0.50	1	10/27/2022 22:06
Chromium	55	0.50	1	10/27/2022 22:06
Cobalt	12	0.50	1	10/27/2022 22:06
Copper	51	0.50	1	10/27/2022 22:06
Lead	27	0.50	1	10/27/2022 22:06
Mercury	0.43	0.050	1	10/27/2022 22:06
Molybdenum	0.91	0.50	1	10/27/2022 22:06
Nickel	46	0.50	1	10/27/2022 22:06
Selenium	ND	0.50	1	10/27/2022 22:06
Silver	ND	0.50	1	10/27/2022 22:06
Thallium	ND	0.50	1	10/27/2022 22:06
Vanadium	53	0.50	1	10/27/2022 22:06
Zinc	70	5.0	1	10/27/2022 22:06

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	94	70-130	10/27/2022 22:06

Analyst(s): DB



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 2. 0-0.5	2210J05-003A	Soil	10/25/2022 13:10	ICP-MS5 283SMPL.d	257135

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.67	0.50	1	10/27/2022 22:10
Arsenic	9.3	0.50	1	10/27/2022 22:10
Barium	170	5.0	1	10/27/2022 22:10
Beryllium	0.51	0.50	1	10/27/2022 22:10
Cadmium	ND	0.50	1	10/27/2022 22:10
Chromium	63	0.50	1	10/27/2022 22:10
Cobalt	11	0.50	1	10/27/2022 22:10
Copper	32	0.50	1	10/27/2022 22:10
Lead	26	0.50	1	10/27/2022 22:10
Mercury	0.34	0.050	1	10/27/2022 22:10
Molybdenum	0.71	0.50	1	10/27/2022 22:10
Nickel	60	0.50	1	10/27/2022 22:10
Selenium	ND	0.50	1	10/27/2022 22:10
Silver	ND	0.50	1	10/27/2022 22:10
Thallium	ND	0.50	1	10/27/2022 22:10
Vanadium	51	0.50	1	10/27/2022 22:10
Zinc	69	5.0	1	10/27/2022 22:10

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	103	70-130	10/27/2022 22:10

Analyst(s): DB



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 2. 2-2.5	2210J05-004A	Soil	10/25/2022 13:20	ICP-MS5 286SMPL.d	257135

Analytes	Result	RL	DF	Date Analyzed
Antimony	ND	0.50	1	10/27/2022 22:20
Arsenic	4.7	0.50	1	10/27/2022 22:20
Barium	130	5.0	1	10/27/2022 22:20
Beryllium	ND	0.50	1	10/27/2022 22:20
Cadmium	ND	0.50	1	10/27/2022 22:20
Chromium	54	0.50	1	10/27/2022 22:20
Cobalt	9.1	0.50	1	10/27/2022 22:20
Copper	17	0.50	1	10/27/2022 22:20
Lead	6.6	0.50	1	10/27/2022 22:20
Mercury	ND	0.050	1	10/27/2022 22:20
Molybdenum	ND	0.50	1	10/27/2022 22:20
Nickel	35	0.50	1	10/27/2022 22:20
Selenium	ND	0.50	1	10/27/2022 22:20
Silver	ND	0.50	1	10/27/2022 22:20
Thallium	ND	0.50	1	10/27/2022 22:20
Vanadium	45	0.50	1	10/27/2022 22:20
Zinc	27	5.0	1	10/27/2022 22:20

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	95	70-130	10/27/2022 22:20

Analyst(s): DB



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 3. 0-0.5	2210J05-005A	Soil	10/25/2022 13:55	ICP-MS5 287SMPL.d	257135

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.76	0.50	1	10/27/2022 22:24
Arsenic	11	0.50	1	10/27/2022 22:24
Barium	190	5.0	1	10/27/2022 22:24
Beryllium	0.70	0.50	1	10/27/2022 22:24
Cadmium	ND	0.50	1	10/27/2022 22:24
Chromium	55	0.50	1	10/27/2022 22:24
Cobalt	12	0.50	1	10/27/2022 22:24
Copper	36	0.50	1	10/27/2022 22:24
Lead	14	0.50	1	10/27/2022 22:24
Mercury	0.15	0.050	1	10/27/2022 22:24
Molybdenum	0.68	0.50	1	10/27/2022 22:24
Nickel	52	0.50	1	10/27/2022 22:24
Selenium	ND	0.50	1	10/27/2022 22:24
Silver	ND	0.50	1	10/27/2022 22:24
Thallium	ND	0.50	1	10/27/2022 22:24
Vanadium	65	0.50	1	10/27/2022 22:24
Zinc	82	5.0	1	10/27/2022 22:24

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	104	70-130	10/27/2022 22:24

Analyst(s): DB



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 3. 2-2.5	2210J05-006A	Soil	10/25/2022 14:05	ICP-MS5 288SMPL.d	257135

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.58	0.50	1	10/27/2022 22:27
Arsenic	15	0.50	1	10/27/2022 22:27
Barium	1100	5.0	1	10/27/2022 22:27
Beryllium	0.84	0.50	1	10/27/2022 22:27
Cadmium	ND	0.50	1	10/27/2022 22:27
Chromium	59	0.50	1	10/27/2022 22:27
Cobalt	95	0.50	1	10/27/2022 22:27
Copper	25	0.50	1	10/27/2022 22:27
Lead	16	0.50	1	10/27/2022 22:27
Mercury	0.068	0.050	1	10/27/2022 22:27
Molybdenum	1.3	0.50	1	10/27/2022 22:27
Nickel	120	0.50	1	10/27/2022 22:27
Selenium	ND	0.50	1	10/27/2022 22:27
Silver	ND	0.50	1	10/27/2022 22:27
Thallium	ND	0.50	1	10/27/2022 22:27
Vanadium	88	0.50	1	10/27/2022 22:27
Zinc	35	5.0	1	10/27/2022 22:27

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	99	70-130	10/27/2022 22:27

Analyst(s): DB



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 4. 0-0.5	2210J05-007A	Soil	10/25/2022 14:35	ICP-MS5 289SMPL.d	257135

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.73	0.50	1	10/27/2022 22:31
Arsenic	9.1	0.50	1	10/27/2022 22:31
Barium	190	5.0	1	10/27/2022 22:31
Beryllium	0.59	0.50	1	10/27/2022 22:31
Cadmium	ND	0.50	1	10/27/2022 22:31
Chromium	83	0.50	1	10/27/2022 22:31
Cobalt	15	0.50	1	10/27/2022 22:31
Copper	43	0.50	1	10/27/2022 22:31
Lead	28	0.50	1	10/27/2022 22:31
Mercury	0.58	0.050	1	10/27/2022 22:31
Molybdenum	0.61	0.50	1	10/27/2022 22:31
Nickel	75	0.50	1	10/27/2022 22:31
Selenium	ND	0.50	1	10/27/2022 22:31
Silver	ND	0.50	1	10/27/2022 22:31
Thallium	ND	0.50	1	10/27/2022 22:31
Vanadium	58	0.50	1	10/27/2022 22:31
Zinc	130	5.0	1	10/27/2022 22:31

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	104	70-130	10/27/2022 22:31

Analyst(s): DB



## Analytical Report

**Client:** Tetra Tech Inc.  
**Date Received:** 10/26/2022 16:25  
**Date Prepared:** 10/27/2022  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SMP-IA Throw Area.Loc 4. 2-2.5	2210J05-008A	Soil	10/25/2022 14:55	ICP-MS5 290SMPL.d	257135

Analytes	Result	RL	DF	Date Analyzed
Antimony	ND	0.50	1	10/27/2022 22:35
Arsenic	4.8	0.50	1	10/27/2022 22:35
Barium	140	5.0	1	10/27/2022 22:35
Beryllium	0.63	0.50	1	10/27/2022 22:35
Cadmium	ND	0.50	1	10/27/2022 22:35
Chromium	68	0.50	1	10/27/2022 22:35
Cobalt	14	0.50	1	10/27/2022 22:35
Copper	22	0.50	1	10/27/2022 22:35
Lead	7.9	0.50	1	10/27/2022 22:35
Mercury	0.15	0.050	1	10/27/2022 22:35
Molybdenum	ND	0.50	1	10/27/2022 22:35
Nickel	50	0.50	1	10/27/2022 22:35
Selenium	ND	0.50	1	10/27/2022 22:35
Silver	ND	0.50	1	10/27/2022 22:35
Thallium	ND	0.50	1	10/27/2022 22:35
Vanadium	54	0.50	1	10/27/2022 22:35
Zinc	42	5.0	1	10/27/2022 22:35

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	102	70-130	10/27/2022 22:35

Analyst(s): DB





## Quality Control Report

**Client:** Tetra Tech Inc.  
**Date Prepared:** 10/31/2022  
**Date Analyzed:** 10/31/2022  
**Instrument:** GC20  
**Matrix:** Soil  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**BatchID:** 257366  
**Extraction Method:** SW3540C  
**Analytical Method:** SW8082  
**Unit:** mg/kg  
**Sample ID:** MB/LCS/LCSD-257366  
 2210J05-008AMS/MSD

### QC Summary Report for SW8082

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Aroclor1016	ND	0.050	0.050	-	-	-
Aroclor1221	ND	0.050	0.050	-	-	-
Aroclor1232	ND	0.050	0.050	-	-	-
Aroclor1242	ND	0.050	0.050	-	-	-
Aroclor1248	ND	0.050	0.050	-	-	-
Aroclor1254	ND	0.050	0.050	-	-	-
Aroclor1260	ND	0.050	0.050	-	-	-
Aroclor1262	ND	0.050	0.050	-	-	-
Aroclor1268	ND	0.050	0.050	-	-	-

**Surrogate Recovery**

Decachlorobiphenyl	0.040			0.05	80	50-150
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Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aroclor1016	0.16	0.18	0.15	107	118	60-140	9.66	20
Aroclor1260	0.16	0.18	0.15	105	117	60-140	10.6	20

**Surrogate Recovery**

Decachlorobiphenyl	0.039	0.041	0.050	78	82	50-150	5.23	20
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Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aroclor1016	1	0.16	0.15	0.15	ND	106	101	60-140	4.65	20
Aroclor1260	1	0.16	0.15	0.15	ND	108	103	60-140	4.54	20

**Surrogate Recovery**

Decachlorobiphenyl	1	0.037	0.035	0.050		73	70	50-150	4.40	20
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## Quality Control Report

<b>Client:</b>	Tetra Tech Inc.	<b>WorkOrder:</b>	2210J05
<b>Date Prepared:</b>	11/03/2022	<b>BatchID:</b>	257640
<b>Date Analyzed:</b>	11/04/2022	<b>Extraction Method:</b>	SW3540C
<b>Instrument:</b>	GC20	<b>Analytical Method:</b>	SW8082
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/kg
<b>Project:</b>	UC Berkeley Sampling	<b>Sample ID:</b>	MB/LCS/LCSD-257640

### QC Summary Report for SW8082

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Aroclor1016	ND	0.050	0.050	-	-	-
Aroclor1221	ND	0.050	0.050	-	-	-
Aroclor1232	ND	0.050	0.050	-	-	-
Aroclor1242	ND	0.050	0.050	-	-	-
Aroclor1248	ND	0.050	0.050	-	-	-
Aroclor1254	ND	0.050	0.050	-	-	-
Aroclor1260	ND	0.050	0.050	-	-	-
Aroclor1262	ND	0.050	0.050	-	-	-
Aroclor1268	ND	0.050	0.050	-	-	-

**Surrogate Recovery**

Decachlorobiphenyl	0.035			0.05	70	50-150
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Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aroclor1016	0.16	0.17	0.15	103	116	60-140	11.5	20
Aroclor1260	0.15	0.16	0.15	97	110	60-140	12.7	20

**Surrogate Recovery**

Decachlorobiphenyl	0.032	0.033	0.050	65	67	50-150	3.13	20
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## Quality Control Report

<b>Client:</b> Tetra Tech Inc.	<b>WorkOrder:</b> 2210J05
<b>Date Prepared:</b> 10/27/2022	<b>BatchID:</b> 257169
<b>Date Analyzed:</b> 10/27/2022	<b>Extraction Method:</b> SW3550B
<b>Instrument:</b> GC17, GC21	<b>Analytical Method:</b> SW8270C
<b>Matrix:</b> Soil	<b>Unit:</b> mg/Kg
<b>Project:</b> UC Berkeley Sampling	<b>Sample ID:</b> MB/LCS/LCSD-257169

### QC Summary Report for SW8270C

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Acenaphthene	ND	0.00035	0.0013	-	-	-
Acenaphthylene	ND	0.00028	0.0013	-	-	-
Anthracene	ND	0.00057	0.0013	-	-	-
Benzo (a) anthracene	ND	0.0036	0.013	-	-	-
Benzo (a) pyrene	ND	0.00070	0.0025	-	-	-
Benzo (b) fluoranthene	ND	0.0013	0.0025	-	-	-
Benzo (g,h,i) perylene	ND	0.00089	0.0025	-	-	-
Benzo (k) fluoranthene	ND	0.0010	0.0025	-	-	-
Chrysene	ND	0.00067	0.0025	-	-	-
Dibenzo (a,h) anthracene	ND	0.0011	0.0025	-	-	-
Fluoranthene	ND	0.00079	0.0025	-	-	-
Fluorene	ND	0.0010	0.0025	-	-	-
Indeno (1,2,3-cd) pyrene	ND	0.0035	0.013	-	-	-
1-Methylnaphthalene	ND	0.00033	0.0013	-	-	-
2-Methylnaphthalene	ND	0.00048	0.0013	-	-	-
Naphthalene	ND	0.0031	0.0062	-	-	-
Phenanthrene	ND	0.00068	0.0013	-	-	-
Pyrene	ND	0.00063	0.0025	-	-	-
<b>Surrogate Recovery</b>						
2-Fluorophenol	1.5			1.25	123	70-130
2-Fluorobiphenyl	1.3			1.25	103	60-130

(Cont.)



## Quality Control Report

**Client:** Tetra Tech Inc.  
**Date Prepared:** 10/27/2022  
**Date Analyzed:** 10/27/2022  
**Instrument:** GC17, GC21  
**Matrix:** Soil  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**BatchID:** 257169  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS/LCSD-257169

### QC Summary Report for SW8270C

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acenaphthene	0.051	0.064	0.062	82	103	60-130	22.8	30
Acenaphthylene	0.051	0.065	0.062	81	105	60-130	25.3	30
Anthracene	0.052	0.066	0.062	84	106	60-130	23.0	30
Benzo (a) anthracene	0.054	0.069	0.062	87	110	70-130	23.9	30
Benzo (a) pyrene	0.053	0.067	0.062	85	107	70-130	22.9	30
Benzo (b) fluoranthene	0.052	0.067	0.062	83	107	60-130	24.9	30
Benzo (g,h,i) perylene	0.056	0.069	0.062	89	110	70-130	21.0	30
Benzo (k) fluoranthene	0.053	0.062	0.062	84	100	70-130	17.0	30
Chrysene	0.053	0.065	0.062	85	104	70-130	20.1	30
Dibenzo (a,h) anthracene	0.054	0.070	0.062	86	111	70-130	25.6	30
Fluoranthene	0.054	0.070	0.062	87	112	70-130	25.8	30
Fluorene	0.059	0.074	0.062	94	118	60-130	22.3	30
Indeno (1,2,3-cd) pyrene	0.055	0.069	0.062	88	110	70-130	21.8	30
1-Methylnaphthalene	0.053	0.065	0.062	85	105	70-130	20.7	30
2-Methylnaphthalene	0.053	0.064	0.062	85	103	70-130	19.3	30
Naphthalene	0.053	0.065	0.062	84	104	70-130	21.2	30
Phenanthrene	0.050	0.063	0.062	80	100	60-130	22.0	30
Pyrene	0.053	0.067	0.062	84	107	70-130	23.5	30
<b>Surrogate Recovery</b>								
2-Fluorophenol	1.2	1.4	1.25	94	115	70-130	20.1	30
2-Fluorobiphenyl	1.1	1.3	1.25	85	106	60-130	22.3	30



## Quality Control Report

<b>Client:</b> Tetra Tech Inc.	<b>WorkOrder:</b> 2210J05
<b>Date Prepared:</b> 10/28/2022	<b>BatchID:</b> 257276
<b>Date Analyzed:</b> 10/28/2022	<b>Extraction Method:</b> SW3550B
<b>Instrument:</b> GC21	<b>Analytical Method:</b> SW8270C
<b>Matrix:</b> Soil	<b>Unit:</b> mg/Kg
<b>Project:</b> UC Berkeley Sampling	<b>Sample ID:</b> MB/LCS/LCSD-257276

### QC Summary Report for SW8270C

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Acenaphthene	ND	0.00035	0.0013	-	-	-
Acenaphthylene	ND	0.00028	0.0013	-	-	-
Anthracene	ND	0.00057	0.0013	-	-	-
Benzo (a) anthracene	ND	0.0036	0.013	-	-	-
Benzo (a) pyrene	ND	0.00070	0.0025	-	-	-
Benzo (b) fluoranthene	ND	0.0013	0.0025	-	-	-
Benzo (g,h,i) perylene	ND	0.00089	0.0025	-	-	-
Benzo (k) fluoranthene	ND	0.0010	0.0025	-	-	-
Chrysene	ND	0.00067	0.0025	-	-	-
Dibenzo (a,h) anthracene	ND	0.0011	0.0025	-	-	-
Fluoranthene	ND	0.00079	0.0025	-	-	-
Fluorene	ND	0.0010	0.0025	-	-	-
Indeno (1,2,3-cd) pyrene	ND	0.0035	0.013	-	-	-
1-Methylnaphthalene	ND	0.00033	0.0013	-	-	-
2-Methylnaphthalene	ND	0.00048	0.0013	-	-	-
Naphthalene	ND	0.0031	0.0062	-	-	-
Phenanthrene	ND	0.00068	0.0013	-	-	-
Pyrene	ND	0.00063	0.0025	-	-	-
<b>Surrogate Recovery</b>						
2-Fluorophenol	1.8			1.25	146,F3	70-130
2-Fluorobiphenyl	1.5			1.25	121	60-130



## Quality Control Report

**Client:** Tetra Tech Inc.  
**Date Prepared:** 10/28/2022  
**Date Analyzed:** 10/28/2022  
**Instrument:** GC21  
**Matrix:** Soil  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**BatchID:** 257276  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS/LCSD-257276

### QC Summary Report for SW8270C

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acenaphthene	0.048	0.049	0.062	77	78	60-130	1.33	30
Acenaphthylene	0.048	0.048	0.062	77	77	60-130	0.300	30
Anthracene	0.052	0.052	0.062	83	83	60-130	0.283	30
Benzo (a) anthracene	0.050	0.052	0.062	81	83	70-130	2.69	30
Benzo (a) pyrene	0.053	0.054	0.062	85	86	70-130	1.68	30
Benzo (b) fluoranthene	0.049	0.051	0.062	79	81	60-130	2.26	30
Benzo (g,h,i) perylene	0.054	0.057	0.062	86	91	70-130	5.84	30
Benzo (k) fluoranthene	0.053	0.053	0.062	84	85	70-130	0.846	30
Chrysene	0.051	0.052	0.062	81	83	70-130	1.45	30
Dibenzo (a,h) anthracene	0.055	0.058	0.062	88	93	70-130	5.36	30
Fluoranthene	0.054	0.054	0.062	86	86	70-130	0.322	30
Fluorene	0.054	0.056	0.062	87	89	60-130	2.57	30
Indeno (1,2,3-cd) pyrene	0.055	0.057	0.062	87	91	70-130	4.23	30
1-Methylnaphthalene	0.056	0.055	0.062	90	88	70-130	1.71	30
2-Methylnaphthalene	0.053	0.053	0.062	85	85	70-130	0.697	30
Naphthalene	0.053	0.053	0.062	84	84	70-130	0.120	30
Phenanthrene	0.048	0.049	0.062	77	79	60-130	2.46	30
Pyrene	0.050	0.051	0.062	80	82	70-130	2.46	30
<b>Surrogate Recovery</b>								
2-Fluorophenol	1.3	1.3	1.25	103	104	70-130	1.37	30
2-Fluorobiphenyl	0.96	1.0	1.25	77	82	60-130	6.53	30



## Quality Control Report

**Client:** Tetra Tech Inc.  
**Date Prepared:** 10/27/2022  
**Date Analyzed:** 10/27/2022  
**Instrument:** ICP-MS4  
**Matrix:** Soil  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**BatchID:** 257135  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/kg  
**Sample ID:** MB/LCS/LCSD-257135

### QC Summary Report for Metals

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Antimony	ND	0.12	0.50	-	-	-
Arsenic	ND	0.11	0.50	-	-	-
Barium	ND	0.71	5.0	-	-	-
Beryllium	ND	0.10	0.50	-	-	-
Cadmium	ND	0.092	0.50	-	-	-
Chromium	ND	0.13	0.50	-	-	-
Cobalt	ND	0.064	0.50	-	-	-
Copper	ND	0.13	0.50	-	-	-
Lead	ND	0.065	0.50	-	-	-
Mercury	ND	0.038	0.050	-	-	-
Molybdenum	ND	0.092	0.50	-	-	-
Nickel	ND	0.080	0.50	-	-	-
Selenium	ND	0.21	0.50	-	-	-
Silver	ND	0.057	0.50	-	-	-
Thallium	ND	0.072	0.50	-	-	-
Vanadium	ND	0.11	0.50	-	-	-
Zinc	ND	2.5	5.0	-	-	-
<b>Surrogate Recovery</b>						
Terbium	490			500	99	70-130



## Quality Control Report

**Client:** Tetra Tech Inc.  
**Date Prepared:** 10/27/2022  
**Date Analyzed:** 10/27/2022  
**Instrument:** ICP-MS4  
**Matrix:** Soil  
**Project:** UC Berkeley Sampling

**WorkOrder:** 2210J05  
**BatchID:** 257135  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/kg  
**Sample ID:** MB/LCS/LCSD-257135

### QC Summary Report for Metals

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Antimony	48	47	50	96	94	75-125	2.36	20
Arsenic	47	46	50	94	92	75-125	2.35	20
Barium	470	460	500	94	92	75-125	2.24	20
Beryllium	49	48	50	98	96	75-125	1.77	20
Cadmium	48	48	50	96	95	75-125	0.474	20
Chromium	46	45	50	92	90	75-125	1.35	20
Cobalt	48	47	50	95	93	75-125	2.25	20
Copper	47	47	50	94	93	75-125	1.47	20
Lead	48	47	50	95	93	75-125	1.96	20
Mercury	1.2	1.2	1.25	94	95	75-125	0.929	20
Molybdenum	50	49	50	99	98	75-125	1.81	20
Nickel	47	46	50	94	93	75-125	0.851	20
Selenium	47	46	50	94	93	75-125	1.48	20
Silver	47	47	50	95	93	75-125	1.65	20
Thallium	48	47	50	97	95	75-125	2.22	20
Vanadium	48	47	50	97	95	75-125	1.77	20
Zinc	470	470	500	95	93	75-125	1.72	20
<b>Surrogate Recovery</b>								
Terbium	500	490	500	99	98	70-130	1.59	20





1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

WaterTrax     CLIP     EDF

# CHAIN-OF-CUSTODY RECORD

**WorkOrder: 2210J05**      **ClientCode: TTIO**      **QuoteID: 223961**  
 EQuIS     Dry-Weight     Email     HardCopy     ThirdParty     J-flag  
 Detection Summary     Excel

**Report to:**  
 Jason Brodersen  
 Tetra Tech Inc.  
 1999 Harrison Street, Suite 500  
 Oakland, CA 94612  
 (415) 497-9060    FAX: (510) 433-0830

Email: Jason.brodersen@tetrattech.com  
 cc/3rd Party:  
 PO:  
 Project: UC Berkeley Sampling

**Bill to:**  
 Accounts Payable  
 Tetra Tech Inc.  
 1999 Harrison Street, Suite 500  
 Oakland, CA 94612

**Requested TATs: 10 days;  
 5 days;**  
 Date Received: 10/26/2022  
 Date Logged: 10/26/2022

Lab ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
2210J05-001	SMP-IA Throw Area.Loc 1. 0-0.5	Soil	10/25/2022 12:15	<input type="checkbox"/>	A	A	A	A									
2210J05-002	SMP-IA Throw Area.Loc 1. 2-2.5	Soil	10/25/2022 12:25	<input type="checkbox"/>	A	A	A	A									
2210J05-003	SMP-IA Throw Area.Loc 2. 0-0.5	Soil	10/25/2022 13:10	<input type="checkbox"/>	A	A	A	A									
2210J05-004	SMP-IA Throw Area.Loc 2. 2-2.5	Soil	10/25/2022 13:20	<input type="checkbox"/>	A	A	A	A									
2210J05-005	SMP-IA Throw Area.Loc 3. 0-0.5	Soil	10/25/2022 13:55	<input type="checkbox"/>	A	A	A	A									
2210J05-006	SMP-IA Throw Area.Loc 3. 2-2.5	Soil	10/25/2022 14:05	<input type="checkbox"/>	A	A	A	A									
2210J05-007	SMP-IA Throw Area.Loc 4. 0-0.5	Soil	10/25/2022 14:35	<input type="checkbox"/>	A	A	A	A									
2210J05-008	SMP-IA Throw Area.Loc 4. 2-2.5	Soil	10/25/2022 14:55	<input type="checkbox"/>	A	A	A	A									

**Test Legend:**

1	8082_Soxhlet_S	2	8270_PNA_S	3	CAM17MS_TTLC_S	4	PRDisposal Fee
5		6		7		8	
9		10		11		12	

**Project Manager: Susan Thompson**

**Prepared by: Valerie Alfaro**

**Comments:**

NOTE: Soil samples are discarded 60 days after receipt unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.



### WORK ORDER SUMMARY

Client Name: TETRA TECH INC.

Project: UC Berkeley Sampling

Work Order: 2210J05

Client Contact: Jason Brodersen

QC Level: LEVEL 2

Contact's Email: Jason.brodersen@tetrattech.com

Comments:

Date Logged: 10/26/2022

WaterTrax     CLIP     EDF     Excel     EQUIS     Email     HardCopy     ThirdParty     J-flag

LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
001A	SMP-IA Throw Area.Loc 1. 0-0.5	Soil	SW6020 (CAM 17)	2	8OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10/25/2022 12:15	5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8082 (PCBs w/ Soxhlet Extraction)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		10 days	11/9/2022		<input type="checkbox"/>	<input type="checkbox"/>
002A	SMP-IA Throw Area.Loc 1. 2-2.5	Soil	SW6020 (CAM 17)	2	8OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10/25/2022 12:25	5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8082 (PCBs w/ Soxhlet Extraction)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		10 days	11/9/2022		<input type="checkbox"/>	<input type="checkbox"/>
003A	SMP-IA Throw Area.Loc 2. 0-0.5	Soil	SW6020 (CAM 17)	2	8OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10/25/2022 13:10	5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8082 (PCBs w/ Soxhlet Extraction)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		10 days	11/9/2022		<input type="checkbox"/>	<input type="checkbox"/>
004A	SMP-IA Throw Area.Loc 2. 2-2.5	Soil	SW6020 (CAM 17)	2	8OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10/25/2022 13:20	5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8082 (PCBs w/ Soxhlet Extraction)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		10 days	11/9/2022		<input type="checkbox"/>	<input type="checkbox"/>

NOTES: \* STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- Organic extracts are held for 40 days before disposal; Inorganic extract are held for 30 days.

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

U\*\* = An unpreserved container was received for a method that suggests a preservation in order to extend hold time for analysis.



### WORK ORDER SUMMARY

Client Name: TETRA TECH INC.

Project: UC Berkeley Sampling

Work Order: 2210J05

Client Contact: Jason Brodersen

QC Level: LEVEL 2

Contact's Email: Jason.brodersen@tetrattech.com

Comments:

Date Logged: 10/26/2022

WaterTrax     CLIP     EDF     Excel     EQUIS     Email     HardCopy     ThirdParty     J-flag

LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
005A	SMP-IA Throw Area.Loc 3. 0-0.5	Soil	SW6020 (CAM 17)	2	8OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10/25/2022 13:55	5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8082 (PCBs w/ Soxhlet Extraction)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		10 days	11/9/2022		<input type="checkbox"/>	<input type="checkbox"/>
006A	SMP-IA Throw Area.Loc 3. 2-2.5	Soil	SW6020 (CAM 17)	2	8OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10/25/2022 14:05	5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8082 (PCBs w/ Soxhlet Extraction)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		10 days	11/9/2022		<input type="checkbox"/>	<input type="checkbox"/>
007A	SMP-IA Throw Area.Loc 4. 0-0.5	Soil	SW6020 (CAM 17)	2	8OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10/25/2022 14:35	5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8082 (PCBs w/ Soxhlet Extraction)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		10 days	11/9/2022		<input type="checkbox"/>	<input type="checkbox"/>
008A	SMP-IA Throw Area.Loc 4. 2-2.5	Soil	SW6020 (CAM 17)	2	8OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10/25/2022 14:55	5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5 days	11/2/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8082 (PCBs w/ Soxhlet Extraction)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		10 days	11/9/2022		<input type="checkbox"/>	<input type="checkbox"/>

NOTES: \* STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- Organic extracts are held for 40 days before disposal; Inorganic extract are held for 30 days.

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

U\*\* = An unpreserved container was received for a method that suggests a preservation in order to extend hold time for analysis.





## Sample Receipt Checklist

Client Name: Tetra Tech Inc.  
 Project: UC Berkeley Sampling

Date and Time Received: 10/26/2022 16:25

Date Logged: 10/26/2022

Received by: Valerie Alfaro

Logged by: Valerie Alfaro

WorkOrder No: 2210J05 Matrix: Soil  
 Carrier: Antonio Mason (MAI Courier)

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sampler's name noted on COC?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
COC agrees with Quote?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

Sample/Temp Blank temperature		Temp: 3.8°C	NA <input type="checkbox"/>
ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

#### UCMR Samples:

pH tested and acceptable upon receipt (200.7: ≤2; 533: 6 - 8; 537.1: 6 - 8)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Free Chlorine tested and acceptable upon receipt (<0.1mg/L) [not applicable to 200.7]?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

-----  
 Comments: